



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/719,072

11/21/2003

Mali Gong

62888.00001

2272

30256

7590

06/16/2006

SQUIRE, SANDERS & DEMPSEY L.L.P
600 HANSEN WAY
PALO ALTO, CA 94304-1043

EXAMINER

GOLUB, MARCIA A

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 06/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/719,072	Applicant(s) GONG ET AL.	
	Examiner Marcia A. Golub	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION
Response to Arguments

Applicant's arguments filed 5/9/2006 have been fully considered but they are not persuasive.

Regarding the 1st argument, the reference discloses directing the pump light to the corners of the slab as shown in Figs 4C, 6A, 6B and 7A.

Regarding the 2nd argument, the applicant acknowledges that the reference anticipates the invention in Fig 7A. Since the applicant can be his/her own lexicographer the fact that the reference calls the part an "optical duct that surround a laser slab" and the applicant calls it a "circumambient portion of the laser slab" does not change the fact that both are referring to an undoped YAG crystal that surrounds a doped YAG crystal.

Regarding the 3rd argument, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., no need to direct the pump light at Brewster's angle) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding the 4th argument, the reference discloses in Figs 6A and 6B a doped YAG crystal [2] surrounded by an undoped YAG crystal [17]. Once again, the fact that the reference calls the parts by different names does not change the substance of the invention.

Since the applicant did not contest the rejection of claims 2-5, 7-14, 16-18, other than their dependence on allegedly allowable claims 1, 6 and 15, the rejection is considered to be proper.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitations "at one same side of said laser slab" (claim 11) and "another side of said laser slab" (claim 12) are indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang (US pub. 20020105997).

With respect to **claims 1 and 15**, Zhang discloses a multi-pass geometry and constructions for diode-pumped solid-state laser comprising; directing a pump light into a laser slab through slab comers of said laser slab (see fig. 4C and paragraph 0023); propagating the pump light within the laser slab by total internal reflection (TIR) (see paragraph 0006); and substantially absorbing the pump light during propagating (see paragraph 0016); wherein said laser slab includes a circumambient portion [17] and a central portion [2] (see fig. 6A, 6B, 15I, 15N), said circumambient portion including an un-doped host area [undoped YAG], said center portion including one or more doped host areas [laser slab] (see paragraphs 0092 and 0202).

With respect to **claims 2, 10, and 16**, Zhang discloses wherein corner faces of said laser slab are coated for high transmission for the wavelength of the pump light (see paragraph 0129), and lateral faces of said slab are coated for high reflection for the wavelength of the pump light (see paragraph 0016).

With respect to **claims 3 and 17**, Zhang discloses wherein a laser light propagates inside the laser slab between two TIR faces in a zigzag optical path (see paragraph 0006 and fig. 10B).

With respect to **claims 4 and 18**, Zhang discloses wherein the step of absorbing achieves a high absorption efficiency through total internal reflection (TIR) of pump light inside said laser slab (see Zhang's claim 5H).

With respect to **claim 5**, Zhang discloses wherein the step of absorbing achieves multiple absorptions through total internal reflection (TIR) of pump light inside said laser slab (see paragraphs 0016 and 0022).

With respect to **claim 6**, Zhang discloses a laser slab formed by a solid state laser material (0118), said laser slab including an input receiving an input beam (see fig. 10B), an output outputting an output beam and slab corners with corner faces (see fig. 10C); and a pump source providing a pump light (see fig. 10A); wherein said pump light is directed into said laser slab through said slab corners of said laser slab (see fig. 10A), propagated within said laser slab by total internal reflection (TIR) (see paragraph 0006), and substantially absorbed during propagation (see paragraph 0016); and wherein said laser slab outputs an amplified laser beam (see paragraph 0075); wherein said laser slab includes a circumambient portion [17] and a central portion [2] (see fig. 6A, 6B, 15I, 15N), said circumambient portion including an un-doped host area [undoped YAG], said center portion including one or more doped host areas [laser slab] (see paragraphs 0092 and 0202).

With respect to **claim 7**, Zhang discloses wherein the number of said corner faces is four (see fig. 10A and paragraph 0023).

With respect to **claim 9**, Zhang discloses wherein a cross section of said central portion is square or circular (see fig. 2A)

With respect to **claim 11**, Zhang discloses wherein the input beam and the output beam are located at one same side of said laser slab, said input beam and said output beam forming an angle with each other (see fig. 15T).

With respect to **claim 12**, Zhang discloses wherein two mirrors are placed at another side of the said laser slab symmetrically with respect of said input beam and said output beam (see fig. 12A)

With respect to **claims 13 and 14**, Zhang discloses wherein said pump source includes a diode array, a coupling system, and being a fiber bundle (see paragraph

Art Unit: 2828

0094), said coupling system including two cylindrical lenses (23) and a lens duct (17), said two cylindrical lenses being placed between the diode array and the lens duct, generatrices of said two cylindrical lenses are orthogonal to each other and are parallel to fast axis and slow axis of said diode array, respectively (see paragraph 0211).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

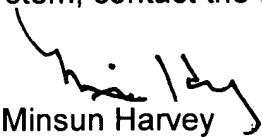
Contact Info

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcia A. Golub whose telephone number is 571-272-8602. The examiner can normally be reached on M-F 9-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marcia A. Golub
Assistant Examiner
Art Unit 2828


Minsun Harvey
Supervisor
Art Unit 2828

MAG